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Features of the Organization of Communications of the Ground Forces In Operations During a Non-Nuclear Period of Warfare

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Research into the problems of conducting combat operations and warfare in general, in which only conventional means of destruction are used but where there is the constant threat of nuclear weapons, shows that under these conditions the planning and preparation of operations by ground troops must be conducted according to two variants: one in which nuclear weapons are used (from the beginning of the operation or introduced during combat actions), and one in which nuclear weapons are not used. This has an effect on how we solve the problems of supporting such operations, including the organization of communications.

Actually, even if combat actions begin with conventional means only, communications must be planned and deployed with regard to the nuclear variant, since the reorganization of communications, upon learning of a direct nuclear threat or after a surprise enemy nuclear attack, would take longer than would the dispersal of troops and the relocation of command posts to new areas. In other words, to support the control of combat actions of ground forces in which only conventional weapons are used, we must build a communications system capable of fulfilling its functions, without basic changes, during the regrouping of troops and under conditions of nuclear warfare. Needless to say, this refers not only to the structure of the communications system but also to the entire complex of organizational-technical and defensive measures necessary to keep the system effective.

The experience of World War II showed that it is impossible to break through prepared enemy defenses without creating a definite quantitative and qualitative superiority of our own forces and weapons in the breakthrough sector. This principle is undoubtedly valid for operations in modern warfare as well. At the same time, it cannot be overlooked that the heavy concentration of troops in a narrow zone of the front can lead to great losses if the enemy uses nuclear weapons. It can therefore be expected that the process of troop concentration will be of much shorter

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duration and, particularly, will not involve advance troop buildup at the very forward edge of enemy defenses as was the case in the last war. The majority of large units and units can attack the enemy while advancing to the breakthrough sector from more or less distant and dispersed assembly areas.

These circumstances lead to a series of conclusions regarding the maintenance of communications. It is quite obvious that during the breakthrough period the front (army) communications system must increase the density of auxiliary communications centers on the main strike axis, since there will be a great increase in the number of information sources based on these centers. The destruction of any of these centers, particularly the advance one in the breakthrough sector, will result in serious complications in troop control.

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It must also be taken into account that when only conventional weapons are used, the communications system is in less danger of destruction but has fewer demands on its carrying capacity. Therefore, the organization of one or two additional auxiliary centers does not necessarily mean a marked increase in the number of communications lines or, consequently, in the total expenditure of communications means, since the output of a group of channels and the number of lines between individual centers can be decreased in any given instance. For example, under such conditions an army command post may have only a cable line to one advance auxiliary communications center and only radio relay to another one. These auxiliary centers must, of course, be interconnected by lateral lines.

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In organizing communications in operations during a nonnuclear period of warfare, we must also bear in mind that the breakthrough sector will be saturated with observation posts of formation commanders (commanders). In contrast to command posts and forward command posts, which are also set up during such a period, observation posts are temporary control points deployed right at the forward edge of the enemy defenses for control of our troops operating in the breakthrough sector.

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During World War II, observation posts usually played a decisive role in troop control during the breakthrough of prepared enemy defenses, and they therefore had widely ramified

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communications with subordinate and cooperating troops. In such instances, direct communications were usually set up with the observation posts of subordinate commanders located in the breakthrough sector. Other communications were maintained primarily through the command post. The commander of the air army was located at the observation post of the front commander, a representative of the air army at the observation post of the combined-arms (tank) army, and an aviation control officer at the divisional observation posts. Coordination with aviation was conducted through these officers. In our opinion, these principles are applicable to the subject under discussion. However, in view of the constant threat of the use of nuclear weapons, the role of command posts and forward command posts and their communications centers is growing. For this reason the personnel strength of operations groups and communications centers of observation posts may be expected to decrease.

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As already noted, during an enemy attack or during their commitment to the breakthrough, some large units will be advancing from assembly areas and will be some distance from the communications centers and communications lines of the formation. Therefore, in resolving problems of organizing communications through auxiliary (support) centers of a system, we must also take into account the need to control the columns of these advancing troops.

A large concentration of troops in the breakthrough sector intensifies the problem of electromagnetic compatibility in the radioelectronic equipment being used. Particularly, great difficulties will occur in the frequency allocations of shortwave and ultra-shortwave frequencies in radio communications at the tactical level of command. Because of the limited frequency capacity of these bands, unfortunately it will be impossible to avoid mutual radio interference. For this reason, each radio network (radio link) must have two designated reserve frequencies, and the most important networks should have three. This is the only way we can be sure of having at least one assigned frequency free from interference and available to transmit urgent messages at any time, since radio exchanges among all the radio networks will not be simultaneous.

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Mutual radio interference can be appreciably reduced by decreasing the number and duration of radio conversations and by eliminating unwarranted testing of radio communications. Also,

during the breakthrough of enemy defenses it is advisable to use a lower power output for communications on the axis of the main strike. With this in mind we should make broad use of directional antennas. It goes without saying that in the breakthrough sector we must make maximum use of wire and relay communications equipment in order to decrease the load on radio channels and also to lessen mutual radio interference.

Another characteristic trait of these operations will be the substantial reduction in the rate of advance and in the depth to which the troops will advance in one 24-hour period. This will result in an increase in the length of time command posts remain in the same place, a shortening of relocation distances, a decrease in the total time needed to build up communications lines and systems, and other conditions favorable for communications.

However, this weakening of the dynamism of the command system also has its dark side from the viewpoint of organizing communications. Thus, because the control points are relocated less frequently, it is necessary to camouflage them better and to improve communications security as well. It is known that our probable enemy has excellent capabilities for discovering our troop groupings and even the objectives of our operations merely from the radio transmissions of command posts. In addition, information from radio reconnaissance is used to mount strikes against our command posts.

In order to hinder enemy radio reconnaissance, especially when we are about to begin our attack or during our breakthrough of enemy defenses, we must severely limit the use of shortwave and ultra-shortwave radio communications, especially in the meter band. The basic means of communications in formations during these two stages must be main line cables. Subsequent operations will inevitably require the utilization of all means of communication, including shortwave radio stations. However, it is impermissible to locate the latter directly at command posts of a front or army, or even of a division, if these command posts remain in the same location for somewhat extended periods of time.

In the event of increased enemy resistance during the operation, or of a sharp deceleration of our advance, we must limit the use of radio means, even of tropospheric and radio-relay

lines in the meter band at the army level, and make greater use of wire communications. It is not difficult to see that the role of wire communications will increase markedly in operations in which only conventional weapons are used, but in which there is constant threat of a surprise enemy nuclear strike (in comparison with their role in operations in nuclear warfare).* This circumstance must be taken into account in working out T/O&E questions of communications units of formations and large units.

One very important task is to maintain reliable communications with rocket large units and units. When only conventional means of destruction are used, these large units and units can be used to mount strikes against the enemy with non-nuclear munitions. Another possible way of using rocket troops is to have them ready to mount a nuclear strike while they are in an "inactive" state and relocating from one position to another directly behind advancing motorized rifle and tank large units. But even in this case, the system of communications with rocket large units (units) will be deployed on all lines, and measures will be taken to ensure its survival in case of an enemy nuclear strike.

In conclusion, we shall turn our attention again to one particular characteristic of the operations under review. It is very probable that the enemy will use nuclear land mines as soon as our troops enter the line of his prepared nuclear mine obstacles. The use of these nuclear means (whether or not it coincides with the beginning of a general nuclear war) will be a very serious factor and will have a great influence on the planning and conduct of the offensive operations of our troops.

This also applies to communications personnel. Above all, we must allow for the possibility of extensive zones of radioactive contamination which will make it more difficult to construct and use cable lines and, in some areas, radio-relay lines as well. Nor can we ignore the effect of electromagnetic impulses emanating from detonations of nuclear land mines. If cable lines

* The above discussion refers to existing means of communications with their actual technical characteristics.

are not equipped with supplementary electrical safeguards, they may very possibly be damaged at distances up to several kilometers from the nuclear land mine. An important task of communications under these conditions will be to ensure the control of special detachments assigned to seize and deactivate nuclear land mines.

The principles stated here apply to offensive operations. The non-nuclear period will also see an increase in the role of defensive operations by fronts and armies, operations which by their nature will undoubtedly have much in common with the defensive operations of World War II. In addition, the ever present threat of enemy nuclear attack demands greater dispersal of forces, extensive maneuvering by them, creation of powerful and highly mobile reserves, better concealment of troops, and greater efficiency of control. The need to camouflage troops and command points will increase considerably. Under these conditions, the primary communications means will be main line cables, which have the greatest security. However, the entire existing communications complex will be used during an engagement. A command post which has exposed itself must, of course, relocate to a new area in order to avoid being hit by a nuclear strike. Taking this into account, we must limit the use of insecure communications means, especially shortwave radio communications, to extreme emergencies when more secure communications have been put out of service.

One feature of communications to be kept in mind when organizing communications for defense is that, if nuclear weapons are used, our troops may take the offensive immediately after nuclear counterstrikes.

As may be seen from the above statements, operations in a non-nuclear period of warfare have characteristics which strongly influence the organization and maintenance of communications. The more the operational-tactical bases for these operations are worked out theoretically and tested in exercises, the more precisely defined will be the tasks of communications and the conditions and principles of communications organization and support.